

Cooperation and Food Safety theory and evidences in the light of the Amartya Sen approach

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Abstract

The study proposes a preliminary interpretation of food safety as a basic component of basic capabilities (Sen, 1993). The perspective of the paper is based upon the concept of Food System conceived as the outcome of the correlation of institutional, technical, organizational and cultural dimensions. The origin and the consequences of the safety crisis are considered in the light of the relationships among these dimensions in large scale food chains. The organizational strategies to cope with safety goals are presented in their relations with values and habits in the case study relating to Coop Italia, a large retailer company.

JEL: P13, Q13

1. Introduction

The study aims at examining the possibilities of cooperating in order to ensure the degree of food safety expected within the European supply chains. The methodology is based upon a theoretical investigation and a national level case study (*Coop Italia*). Firstly, the conceptualization of the food safety is proposed as a fundamental individual right. To this purpose the paper refers to the theoretical approach of Amartya Sen. Individual achievements are conceived as functionings and capabilities as vectors of functionings: albeit the availability of safe foods should be thought of as a basic capability, contemporary European societies are facing an increasing risk that individuals are deprived of the possibility of having safe food available. Several factors

determine this situation: the study summarizes these causes under the concept of Food System and emphasizes the social dimensions of the food individual behaviours.

Within this framework, the paper takes into consideration the organizational changes occurred in AgriFood Chains due to the enhancement of quality and safety strategies and focuses cooperation and tighter coordination as success factors. The position of the cooperative firms in this context is addressed and it is argued that the consumers cooperative has the possibilities of directly contributing to the enhancement of the individual well-being. The paper conjectures that to this purpose the cooperative has to integrate the search for the goal of well-being enhancement with the design of an efficient organizational architecture of the supply chain relations.

In order to corroborate the hypothesis proposed, the paper analyzes the case study *Coop Italia*, the marketing consortium of the Coop System, the largest retailer Italian group, involving 135 consumers cooperatives. Two reasons motivates the critical nature of this case study (Yin, 1994). The units investigated are very well established and structured in several geographical areas. Furthermore, since the 80's of the past century the companies elaborate detailed food safety strategies.

The paper is organized as follows. The paragraph 2 illustrates some general elements of the Amartya Sen approach and the a tentative related conceptualization of food safety is proposed. The paragraph 3 illustrates the organizational changes promoted by the food safety strategies. The case study is presented and discussed in paragraph 4. The final remarks are presented in the paragraph 5.

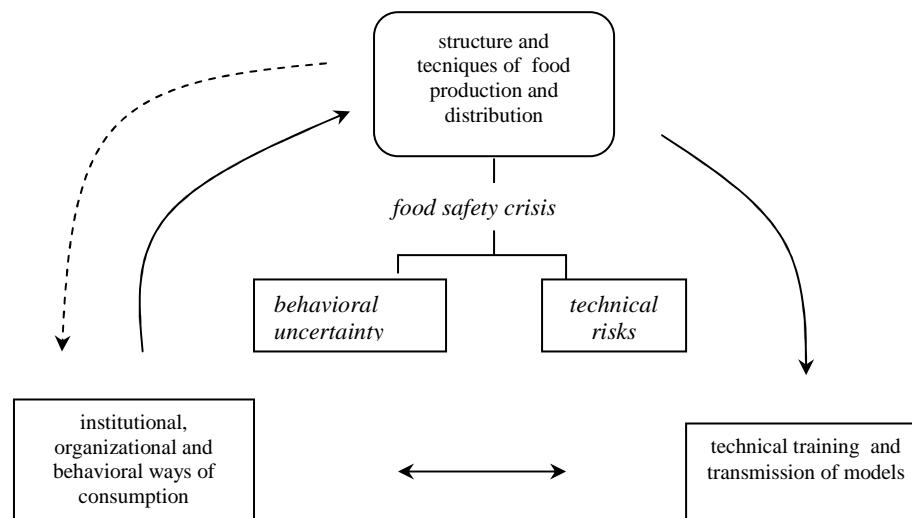
2. Food system and basic capabilities

2.1 Food system and safety crisis

According to common sense and to the intentions of public authorities, consumers expect food to be safe, whereas safety is thought of as a basic and indispensable

characteristic of food. The reason for such an evaluation is that the degree of safety of food is a prerequisite for achieving the expected nutritional and cultural values of the food and to avoid the occurrence of diseases or health damages. It is usually accepted that unsafe food has not to be channelled through supply chains and an increasing attention is being paid to the issues related both in economic and organizational terms. On the other hand, the investments made and the strategies adopted in this field are determining changes in the organizational configurations of the food chains (see section 3). The concept of Food System emphasizes the social dimensions of the food production and consumption and provides an useful framework to address the issues proposed in a wide perspective. A Food system is the outcome of the correlation among: a) types of foods; b) the structures and the techniques supporting their production, distribution and preparation; c) the institutional, organizational and behavioral ways of the consumption; d) the technical training and the transmission of “model”; f) the cultural meanings and the psychological views (Seppilli, 1994). The antropological nature of the Food System shed lights on the very general processes concerning the production and the consumption of food. The issues posited by the need of supplying safe foods arise within the context of a given Food system where, for instance, there is an intense connection between the structures and the techniques, the institutional, organizational and behavioral ways of the consumption and the technical training and the transmission of “models”. In broad terms, the figure 1 illustrates the potential structure of correlations among three relevant dimensions of the Food systems in European Countries.

Figure 1: Correlation among three dimensions of the Food Systems



The bilateral connection between the technical subsystem and the ways of consumption accounts for reciprocal influence established by the need of satisfying the consumers needs and the ability of food chains management of identifying and specifying the characteristics of the products. The sociological research has challenged the conceptualization of production and consumption as autonomous categories of social life, recognising consumers as relational actors in recursive, mutually constituted food circuits (Goodman, 2002; Lockie, 2002). Under this perspective, the market segmentation and the ability of innovate the food products enhancing the utilities provided to the consumers require to associate both symbolic and real characteristics developing perspectives shared from producers and consumers. The diffusion of “models” thus is a consequence and a determinant of the way of consumption and contribute to the implementing of chains management strategies.

A central characteristics of the main trends we would point out is the “metropolitan dimension” of the production-distribution-consumption chains. The development of large scale human settlement and the urban concentration require to mobilize daily large quantities of agricultural products, raw material and foods. The increasing complexity of

the contemporary food processing accrues the needs for control activities caused by the large scale development (Trystam, Bimbenet, 1998). On the other hand, the emerging of rural space as an interaction between local and non-local processes (Marsden, 1998) gives rise to integrated production-consumption networks which are not still able to characterize the Food system. A consequence of the processes broadly depicted is the large physical distances between the places of production and consumption, but it is also relevant the way of interaction between the dimensions of the systems depicted in the figure 1. To some extent, the attempts made in identifying and constructing production-consumption networks could be thought of as an answer to the issues posed by this distances.

We assume that the food safety crisis are usually due either to technical sources (e.g., the unpredictable occurrences of accidents) or agents opportunistic behaviours which are not properly aimed at achieving the due outcomes (see figure 1). While specific technical arrangements are designed in order to cope with technical risks (e.g. Haccp systems and so on), agents can cope with the behavioral uncertainty just adopting adequate institutional arrangements (Williamson, 1985). This contributes to induce agents to choose hybrid governance structures in order to sustain their own food safety strategies (Martino, Perugini, 2006). Under this perspective, the food safety crisis can be thought of as breaks between the link production-ways of consumption. Food crisis are consequences of unforeseeable - or partially foreseeable - technical or behavioural events. On the supply side, agents search to cope with risks and uncertainty and to satisfy the consumers expectations. To the extent they succeed, the correlation between the technical subsystem and the ways of consumption accounts (see figure 1) holds according to the Food systems values and habits. The occurrence of food safety crisis or an unsatisfactory organizational arrangements reduce the strenght of the linkage

between the two dimensions and the possibilities of reflect the systems values as expected. Conversely, as strategies intended to cope with risks and uncertainty are implemented both on private and public sides, the connection of the system dimensions is strengthened.

2.2 Food safety and basic capabilities

In our view, it is the relation between safety and health which require to conceptualize the food safety in more comprehensive manner than the assessment in terms of individual utility. To this purpose we follow the theoretical approach of Amartya Sen (1985, 1991). Sen states that the individual achievements have to be conceived as functionings and the capabilities as vectors of functionings¹. Both capabilities and functioning are represented in the space of the constituting components of living (Sen, 1991). The functioning achieved, e.g. the availability an the consumption of food, sanitary assistance etc, constitutes the *well-being* achieved. The individual capabilities affect well-being in two basic ways. Firstly, as the functioningins achieved constitute the individual weel-being, then the capability of achieving functioning constitute the liberty of well-being (Sen, 1991). Secondly, the well-being achieved depends upon the capability as set of functioning (Sen, 1991). The capabilities reflect the liberty of achieving functioning and can be thought of as a representation of the sostantive freedom (Sen, 1991).

It is the connection between food safety and human health requires to consider the safety as an element of the individual capabilities: this reflect the common social evaluation of the role of food safety in sustaining the individual life and in enhancing

¹ Namely «In the space of functionings any point, representing an n -tuple of functionings, reflects a combination of the person's beings and doings any one (combination) of which person can choose. Capability is thus defined in the *space* of functionings. If a functioning achievement (in the form of an n -tuple of functionings) is a *point* in that space, capability is a *set* of such points (representing the alternative functioning n -tuples can be chosen)». (Sen, 1993, p. 38).

the quality of life². Namely, we point out that food safety has to be considered as an element of the individual “basic capabilities” as the availability of safe food contributes to the ability to satisfy crucially important functioning up to certain minimally adequate levels³. This approach also emphasizes the need of dealing with safety issues not strictly in terms of income, due to the potential “absence of correlation” between income and basic capabilities (Sen, 1993, p. 41). To include food safety in the basic capabilities implies to recognize that Food Systems admit values which sustain the evaluation required to identify the capability. In other words, the nexus *Food System values* → *capability* simply recognizes that the necessary evaluation to be made in order to identify the capability (Sen, 1991), is based on the values characterizing the Food system, i.e. the cultural meanings, the psychological views and the habits as a part of the institutional dimensions.

3. Organizational changes supporting food safety strategies

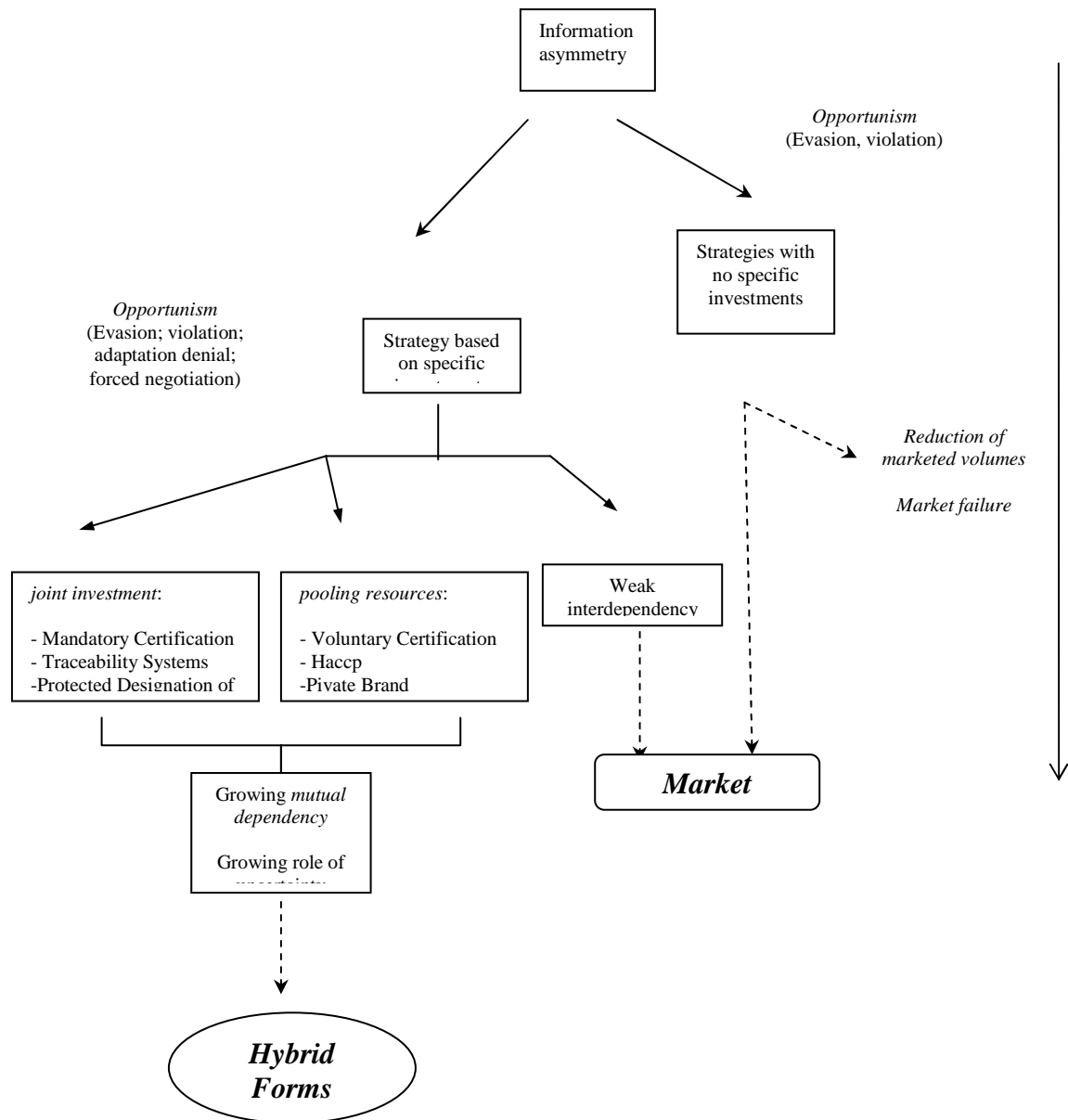
The extent of the capability including safety depends upon the supply strategies adopted by the food companies: the more intended to safety are these strategies, the less uncertain is the capability. On the other hand, the nature of safety characteristics play a role in allowing an individual to achieve functionings which include adequate safety degree. Namely, as the safety characteristics are mainly credence or experience characteristics, the strategies designed to cope with the related information asymmetry issues enhance the possibilities of achieving the expected functionings. Scholars have analyzed the choice of governance structure (Williamson, 1985) in relation to the elaboration of food safety strategies and have showed that these strategies induce agents to choice hybrid forms of governance (Mènard, Valceschini, 2005; Martino, Perugini,

² See Brock (1993) for an analysis of the health in terms of capability and well-being.

³ This reflects the definition of basic capability (Sen, 1993, p. 41).

2006)⁴. In the following we briefly point out some general aspects of the organizational choices drawing from Martino and Perugini (2006) and suggest that the choice of hybrid structure allow the agent to implement their safety

Figure 2: Information, asset specificity, and choice of governance form



Source: Martino, Perugini (2006)

⁴ See Williamson (1991) and Mènard (2004) about the concept of hybrid.

strategies. In broad terms, this implies that the connection between relevant dimensions of the Food System might be strengthened because of the diffusion of hybrid structures. As the safety characteristics are mainly credence and experience in nature, private transactions are greatly influenced by asymmetric information distribution which increases monitoring and verification costs (ante-regulation transaction costs). The more frequent and large-scale “accidents” are, the more these exogenous shocks stimulate agents and public agencies to devise reaction strategies. The main results of this process are the intensification of the structure of the institutional environment and the emergence of new (post-regulation) transaction costs which, in turn, influence organizational adaptation. Thus the choice of governance form is due to the strategy developed by agents in order to face information asymmetry, as well as to the rules and constraints imposed by institutional innovation (e.g., EU Reg. 178). Organizational adaptation is therefore placed in a causal sequence represented in Figure 2 (Martino, Perugini, 2006). Market exchanges – the forms closest to the market – guarantee a proper safety level, by means of opportunism limitation, only when adopted strategies do not entail large specific investments. *Vice versa*, as investment specificity grows, mutual dependency among agents (Mènard, 2004) and uncertainty (Mènard, 2004; Williamson, 1991) render hybrid forms more efficient than hierarchy and market.

Mènard (2007), developing the economics of hybrid organizations, states that the AgriFood cooperative can be thought of as hybrid structure. In the case of cooperative firm, a specific role is played by the connection between the property rights and the decision rights: Mènard (2007) identifies a range of cases entailing the firm based on a

separation between the two types of rights and, at the opposite side, the firm based on a close relation between these rights. Cooperative firms are based on *pooling the resources* which motivate the organization of the firm. Mènard (2007, p.10) points out that it is the specificity of the resources which determine the intensity in selectivity of members as well as the intensity in control their activities. *Contracts* among cooperators vary according to the necessity of coordination, also being influenced by the specificity of the assets. The dimension of *competing conditions* also varies with the type of cooperative and the necessity of controlling free-riding.

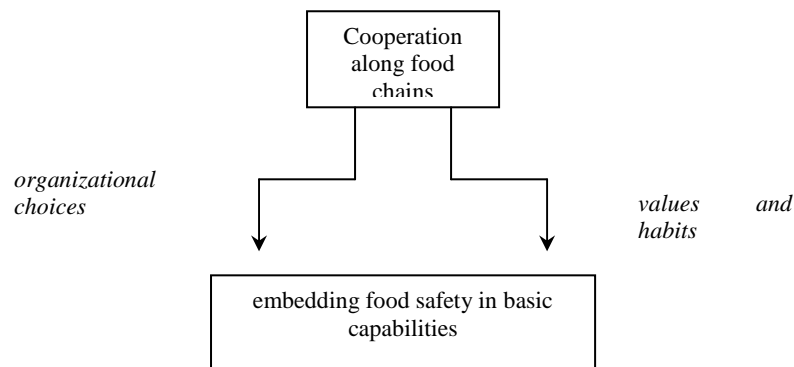
4. Case study

4.1 Theoretical proposition

The analytical framework proposed emphasizes the link between the food safety crisis and the correlation between relevant dimension of Food system. On the one hand, this imply safety crisis may influence or characterize the Food system with respect to its basic components. On the other hand, we have also showed that the organizational choice intended to cope with safety risks and uncertainty can enhance the connection between the dimensions of the systems, also entailing significant set of values and habits. The hybrid governance structure appear to be the more efficient in allowing this kind of outcome and cooperative food is classified as a hybrid form. This is the first reason to assume that cooperation contribute to the implementation of food safety strategies. We would also suggest that a second reason exists, which deal with the very economic nature of the cooperative firms. Actually, the cooperation – within a firm, among firm and among firms and public bodies – tend to reflect deep values of the economic systems and to promote positive economic outcomes (Sen, 2001). Under this view the cooperation along a a food chain tend to embedd significant values – not only tailored in monetary terms – and to channel the economic activities toward the

achievement of outcomes corresponding to these values. The figure 3 summarizes the economic and non economic links between cooperation and the search for enhancing the “basic capabilities” by through food safety.

Figure 3: Cooperation and food safety



As the consumers cooperative has the possibilities of directly contributing to the enhancement of the individual well-being as cooperation (Sen, 2001), the paper conjectures that to this purpose the cooperative has to integrate the search for the goal of well-being enhancement with the design of an efficient organizational architecture of the supply chain relations. This theoretical proposition (Yin, 1994) is addressed in a case study concerning the *Ancc* system and namely *Coop Italia*.

4.2 The case *Coop Italia*⁵

The Ancc-Coop, an Italian national association of consumers’ cooperatives that is made up of large, medium and small distribution companies. Since the middle of ’80 *Coop* started to invest systematically resources in the field of food safety. Flaws and accidents in agri-food sector encouraged *Coop* to intensify and structure the related activities. *Coop Italia* is thus largely involved in policy-making and managing horizontal

⁵ This section largely elaborates on Zucchi (2006) and Martino, Perugini (2006)

functions at national level in this strategic field. The wide variety of suppliers (i.e., large and small firms) also requires specific efforts.

Coop Italia tends to establish a *persistent* and *durable* relationship with suppliers in order to reach the expected and desired standards of safety and quality. The safety strategy is conceived for the “Coop” branded products, but a similar approach also concerns the remaining products.

This safety strategy relies on the following activities (Martino, Perugini, 2006):

- a) *Selection* of suppliers and of agricultural farmers;
- b) *Contract design*: design and elaboration purchasing contracts.
- c) *Regulation*: definition of safety standards (more restrictive than the legal ones); definition of production rules and tasks (protocols); standardization of analysis methods.
- d) *Monitoring*: detailed inspections and controls, mainly on charge of Coop Italia.
- e) *Research*: research activity in the field of food safety in collaboration with academic research institutes.

Namely, national level suppliers (which have to be distinguished from a “basic” local supplier) have to pass through three control steps:

- a) inspections at the productions stage aimed at verifying the respect if hygienic standards and of the quality protocols ;
- b) sampling of products in order to verify their compliance;
- c) analysis (chemical microbiological etc.).

The “Coop” brand products are produced by suppliers directly selected and managed by *Coop Italia*. The whole system includes 425 processors and 19.000 farmers (Coop Italia, 2006), implying thousands inspections and analysis (see Zucchi, 2006 for more

details). The “closeness” between suppliers and distribution companies can be observed in detail bovine, poultry and hog sectors. Partnership is encouraged between companies and suppliers both in specifying the technological solutions and in developing efficient control systems.

Coop Italia coordinates the different actors into play. Protocols setting, supervision and monitoring are the key activities of the current coordinating role (Zucchi, 2006) in the most of the product managed. A traceability system has been developed, widening the standard legal duties and establishing relationships with the remaining actors of the supply chains. Broadly speaking, the food safety strategy of *Coop Italia* relies on an integrated set of tools and this may be due both to the ethical values shared by the companies associated in *Ancc-Coop* and to the perception of more consequential uncertainty.

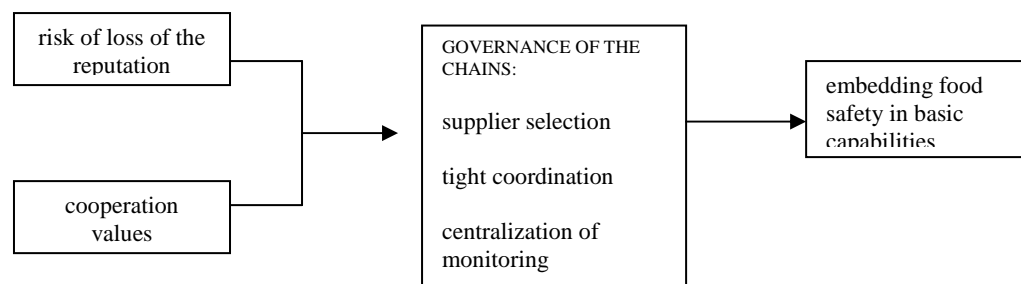
Due to the food safety and quality policies and activities, the purchasing activity cannot be considered a simple “buying” activity. The transaction between the supplier and *Coop Italia* implies that the goods exchanged do satisfy specific standards. This may increase the monitoring cost of the whole activities. So, the horizontal structure of the food safety policies and activities also reflects a specific characteristic of the governance structure chosen. Actually, the form of governance of the transactions at national level economizes the monitoring costs relying on the possibility of performing control at the lower cost granted by the horizontal activities. This approach requires the supplier to accept that: a) the control activities is performed by *Coop* and by itself; b) its processes meet standards and productive protocols. This in turn entails that the supplier is constrained in his decision making process, even though remaining a legally autonomous entity.

Economizing search and monitoring costs is at the basis of the horizontal structure of several activities. This entails a lower level of transaction costs than an alternative, decentralized system of searching and monitoring and faovur. Broadly speaking, one may suggests that the *ex ante* and the *ex post* activities establish a framework aimed at supporting the credibility of the quality signal.

The system of values supporting the strategical choices of *Coop Italia* is rooted in the cooperative thought and sustain the search for efficiency in economic activity. Of course the need to manage the risk of loss of reputation – arising in case of safety (or quality) crisis – influences the organizational choices made. Nonetheless, the investments required to this purpose would be not as large as the current investment, the difference being motivated by the goal of “distributing” to associate consumers the “added value” related to a credible safety degree (Zucchi, 2006).

The figure 4 summarizes the evidences from case study.

Figure 4: Governance and basic capabilities



5. Final remarks

The paper examines the relationships between food safety strategies and social expected outcomes. We namely argue that the safety crisis may affect the basic relationships among relevant dimensions of the Food systems and that, conversely, organizational choices can contribute to enhance the system performances. Our analysis underlines the possibilities of dealing with the food safety in terms of functionings (Sen, 1993) and suggests that the inclusion of food safety within the basic capabilities – in terms of availability of safe food - can be supported by the Food system values. We also suggest that the cooperative firms exhibit two significant characteristics to the purpose of such an inclusion: a) their organizational form support the implementing of food safety strategies; b) the cooperation *per se* entail values which in turn support the search for this outcome. A critical point emerging from the analysis is that the investments needed for supporting the process depicted tend to very specific and this could limit to some extent the diffusion of the approach. A further issue is represented by the competition among hybrid structure in the field of food safety, which could negatively affect the ability of supporting the diffusion of cooperative values. Competition among hybrids thus appears to be a field for further investigation.

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